



Harvest the Wind Locally-owned Projects

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Windustry

Institute for Ag & Trade Policy

- ✍ newsletter
- ✍ www.Windustry.org
- ✍ provide information and technical assistance for wind energy development
- ✍ online tools for evaluating distributed project feasibility
- ✍ Wind Farmers Network



Harvest the Wind

- ✍ Lease Land to a wind developer
- ✍ Form an ownership entity for commercial-size project
- ✍ Install a wind turbine on your land to produce your own electricity (small size turbine)



Wind Development

Two Main Types:

- ✍ Large Wind Plant
- ✍ Distributed Wind Projects



Large Wind Plant

- ✍ Comprised of large concentrations of wind turbines
- ✍ Transmission Lines Required
- ✍ Power delivered to distant population or load center





Distributed Wind Development

- ✍ Single or small clusters of wind turbines
- ✍ Connected to existing or upgraded distribution grid
- ✍ Many times the power is contracted or used locally
- ✍ Often owned & operated by local utility, farmer/landowners, small business or high energy consumers





Why is there wind development in Minnesota?

- ✍ Supportive Public Policy
 - ✍ Sales Tax Exemption on wind turbines
 - ✍ State Production Incentive for projects >2MW
- ✍ 1994 Legislative Agreement with Xcel Energy
- ✍ Renewable Energy Objective (REO)
 - ✍ State statute of 2001
- ✍ Administrative Decisions by MN PUC
 - ✍ i.e. Small Wind Tariff







1994 Legislative Agreement with Xcel Energy

- ✍ 425 MW by 2002
- ✍ 400 MW by 2012 (MN PUC 1999)
- ✍ 125 MW of Biomass
- ✍ Renewable Development Fund
- ✍ Nuclear waste storage stipulations



Overview of Minnesota's Wind Development

Utility Competitive Bidding Process

-  Phase I -25 MW Kenetech - '94
-  Phase II - 107 MW GE/Enron/Zond '98 NW of Lake Benton
-  Phase III -103 MW GE/Enron/Zond '99 Near Ruthton
-  Other large contracts awarded but not yet built



Large wind projects: Local involvement is wind easements

- ✍ No standards
 - ✍ Some good, some bad, some ugly
- ✍ Long Term
 - ✍ Range from 20 years to perpetuity
 - ✍ Most common 25-40 years
- ✍ Main benefit
 - ✍ A way to participate in wind development with no cash outlay from landowner
 - ✍ Little or no risk to landowner

Wind Development: Risk vs. Reward

**Lower Risk &
Responsibility
Lower Reward**

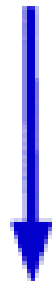


Leasing



**Wind Company
+
Utility**

**Intermediate Risk
& Responsibility
Intermediate Reward**



**Cooperative
+
Investment Pool
+
Partnership**

**Greater Risk &
Responsibility
Greater Reward**



**Individual
Ownership**



Overview of Minnesota's Wind Development







- ✍ Negotiated with Xcel (Projects > 12 MW)
- ✍ Locally Owned
 - ✍ Woodstock - 10.2 MW Dan Juhl '99
 - ✍ Lokota Ridge - 11.25 Navitas/NAE '99
 - ✍ Shakotan Hills - 11.8 Navitas/NAE '99
 - ✍ 17 - 2MW projects - 30 MW - NAE '00-'01
 - ✍ Kas Brothers and other landowners- SW MN
 - 12 - 2MW projects - installed or in-progress
 - ✍ G. McNeilus - Dodge Center, MN
 - 12 - 2MW projects - installed or in-progress



Overview of Minnesota's Wind Development

Non-Xcel Projects

Locally Owned

-  Chandler - 6 MW - Great River Energy (REC)
-  La Qui Parle Valley High School 600kW
-  Moorhead Municipal Utility -1.7 MW
-  MRES/Dairyland/Worthington
 - 2 - 2MWprojects, one more planned
-  MN Wind I and MN Wind II;
 - 1 - 2MW project each - power sold to Alliant
-  SMMPA - 1.9MW under constr. in Fairmont

What makes a good wind project?

- ✍ Average wind speed
- ✍ Proximity/access to the utility grid
- ✍ Cost of capital
- ✍ Federal and State incentives





Minnesota's Renewable Energy Production Payment

- ✍ A payment of 1.5¢ per kWh sold for 10 years
- ✍ Incentive Program cap of 100MW
- ✍ For eligible renewable energy projects
 - ✍ Under 2MW nameplate rating
 - ✍ Ownership by farmer/landowner, small business or non-profit
- ✍ Lessons Learned (as it is being considered for expansion)
 - ✍ Language of current statute too vague; too much room for loopholes and abuse; no individual limits
 - ✍ Incentive Program is key for local ownership




Rural Electric Coops and Municipal Utilities

- ✍ Surveys show members/customers want wind
- ✍ Helps keep energy \$\$ local
- ✍ Access to low cost capital
 - ✍ Bonding authority
 - ✍ USDA - Rural Utility Service (RUS)
- ✍ Various ways to honor “All power requirements” contracts and also develop wind projects
 - Moorhead Municipal Utility - MPS
 - Algona, Iowa - Municipal partnership
 - Waverly, Iowa - Leading Muni

Community-Owned Large Scale Wind Projects

Municipal Utilities

Waverly, IA • Algona, IA • Moorhead, MN

 Exceptional case: Seattle, WA

School districts

Spirit Lake, IA • Lac Qui Parle School, MN • Nevada, IA

Tribal Communities

Rosebud in SD





Farmer-Owned Large Scale Wind Projects

- ✍ Kas Brothers
- ✍ Ed Olsen
- ✍ Christoff Family
- ✍ MN Wind I and MN Wind II

Kas Brothers Plant 25-Year Cash Crop

- ✍ First farmer owned commercial-scale project in US.
- ✍ Two 750 kW Micon turbines installed in summer of 2001.
- ✍ Financed with local banks.
- ✍ Power purchased by Xcel Energy



Richard and Roger Kas --Woodstock, Minnesota



Form a Wind Energy Entity

- ✍ Ongoing work to explore innovative business models for local ownership
 - ✍ Wind Coops
 - Last Mile Coop
 - ✍ LLC's
 - ✍ Investor Pool



MinWind I & Minwind II

- ✍ Formed a Steering Committee
- ✍ Sold Membership Stock (66 farmers, 33 each group)
- ✍ Formed 2 LLC's
- ✍ Hired a Consultant - an experienced wind developer
- ✍ Developed two 1.8MW projects
- ✍ Negotiated Power Purchase Contracts and Financing
- ✍ Built the Project (installed summer '02)



MinWind I & Minwind II

- ✍ Goals included:
 - ✍ Local ownership
 - ✍ Maximize Profitability
 - ✍ Create Economic Dev. in rural areas
 - ✍ Provide quality jobs
 - ✍ Research and utilize available programs and incentives
 - ✍ Develop a “cookie-cutter” model
 - ✍ Maintain Cooperative Principles



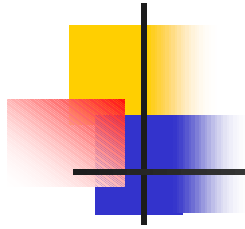
MinWind I & Minwind II

- ✍ Learning process all the way along
- ✍ Hired different experts for different aspects of the project
 - ✍ Legal
 - ✍ Financial
 - ✍ Accountants
- ✍ Take the time to do it right



How to View Wind Power

- ✍ As a significant new crop
 - ✍ compared with corn, soybeans, wheat or ranching
- ✍ As a new energy resource
 - ✍ compared with oil and gas
- ✍ A new industry for rural economy
 - ✍ adds diversity of Natural Resource and Agricultural based economies in rural US



Energy and Agriculture

- ✍ Energy Title in the Farm Bill is an innovative new piece. Currently, the programs are being designed. There are other areas of Farm Bill that support renewable energy ie. RUS and Rural Development
- ✍ There will be a Notice of Federal Request for Proposals later this spring
- ✍ Check the USDA website or www.windustry.org for updates.



In Closing

- ✍ Wind technology is here and the information is available.
- ✍ Wind power is increasingly considered an Agricultural product.
- ✍ Distributed wind generation is good for local energy consumption and local economic development.
- ✍ Be patient and be persistent, it is a process.
- ✍ The challenge is to determine how wind energy can work for you or for your community. And then just do it!